

NEW SPECIES OF *XYLOMELUM* Sm. AND *TRIUNIA* Johnson & Briggs (PROTEACEAE)

by

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ABSTRACT

Foreman, D.B. New species of *Xylomelum* Sm. and *Triunia* Johnson and Briggs (Proteaceae). *Muelleria* 6(5): 299-305 (1987). — *Xylomelum cunninghamianum* sp.nov. from inland northern New South Wales and southern Queensland and *Triunia erythrocarpa* sp. nov. from north-eastern Queensland are described with notes on distribution, ecology and diagnostic features. The misapplication of the name *Xylomelum salicinum* is discussed.

XYLOMELUM Sm.

Xylomelum cunninghamianum D. Foreman, sp. nov.

[*X. salicinum* auct. non (Meisn.) Cunn. ex Benth. (1870): Benth., Fl. austral. 5:408 (1870) *pro parte quoad* Leichhardt, and Lau; F. Muell., S. Sc. Record, n.s., 2: "unpaged pre-print" (Mar. 1886).]

"*X. sp.*", Jacobs & Pickard, Pl. New S. Wales 182 (1981); Stanley & Ross, Fl. S.E. Qld 2:17 (1986) *syn.excl.*

Arbor ad 12 m alta. *Ramuli* teretes, juventute tomentosi. *Foliorum lamina* lanceolata, acuta, pungens, ad basin anguste cuneata, 5-12.5 cm longa, 1.2-2.3 cm lata, coriacea juventute tomentosa, postea glabra; margines interdum parum sinuati, integri vel promineuter dentati praecipue apicem; nervi recti vel parum curvati, ad marginem acute ascendentes. *Inflorescentia* axillaris, 4-6 cm longa, rachis pallide ferrugineo-tomentosa. *Pedicelli* ad 0.5 mm longi. *Perianthium* 8-10 mm longum, ferrugineo-pubescent. *Ovarium* ferrugineo-tomentosum. *Fructus*, ± ovoideum, 6-9 cm longus, 3-4.5 cm latus, apice lato obtuso; pericarpium 8-15 mm crassus, lignosum. *Semen* 5-7 cm longum, 1.5-2 cm latum.

Tree to 12 m tall. *Branchlets* terete, tomentose on young shoots, soon becoming glabrous. *Leaves* opposite; blade lanceolate, acute, pungent at the tip, narrowly cuneate at the base, tapering gradually onto the petiole, 5-12.5 cm long, 1.2-2.3 cm wide, coriaceous, tomentose when young, soon becoming completely glabrous, drying light brown to yellowish green above, paler beneath; margin sometimes slightly sinuate, entire or prominently toothed particularly near the tip; midrib raised and prominent above and beneath; nerves 5-8 on each side of the midrib, raised on both surfaces, ± straight or slightly curved over their entire length, ascending acutely to the margin; reticulations well defined, raised on both surfaces; petiole 1-2.7 cm long. *Inflorescence* axillary, 4-6 cm long; rachis 1 mm diameter, pale ferruginous-tomentose. *Bract* subtending flower-pairs obtuse, ± broad-oblong to broad-oval, 1.5-2 mm x 1.5-2 mm, pale ferruginous-tomentose. *Floral bracts* apparently lacking. *Pedicels* to 0.5 mm long. *Perianth* 8-10 mm long, ferruginous-pubescent; limb 2.5-3 mm long, 1 mm wide. *Anthers* 1 mm long, tipped with a small gland, almost sessile. *Hypogynous glands* 4, free, ± oblong. *Ovary* ferruginous-tomentose; style ferruginous-tomentose at base, becoming glabrous towards the tip; pollen presenter ellipsoidal, c. 1 mm long. *Fruit* ± ovoid with a blunt apex, 6-9 cm long, 3-4.5 cm wide, covered with a dense, velvety indumentum of short ferruginous to grey hairs; pericarp 8-15 mm thick, woody. *Seed* 5-7 cm long, 1.5-2 cm wide; nucleus angular-obovate, 1.5-2 cm long, 1-1.5 cm wide; wing 3.5-5 cm long. (Fig 1).

TYPE COLLECTION:

4-5 km north-west of Wallangra on road to Coolatai, New South Wales, 18.viii.

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Fig. 1. *Xylomelum cunninghamianum*. a — fruiting branchlet, x 1; b — seed, side view, x 1. a & b from type collection.

1985, *D.B. Foreman* 873 (fruiting collection). (Holotype: MEL 1546329. Isotypes: BRI, CANB, NSW).

REPRESENTATIVE SPECIMENS EXAMINED (Total number examined 38):

Queensland — Isla Gorge, 24.v.1977, *N.B. Byrnes & M. Olsen* (BRI); Blackdown Tableland, 22.ii.1982, *S.G. Pearson* (BRI); 80 km SW. of Rolleston, *I.R. Telford* 5816 (BRI); Darling Downs, near Cecil Plains, 4.vi.1946, *C.T. White* 1175 (BRI).

New South Wales — 4.9 km E. of Yetman, 1.xi.1983, *P. Coveny* 11651 & *P. Wilson* (NSW); 4.5 km NW. of Wallangra on road to Coolatai, 18.vii.1985, *D. Foreman* 880 (MEL); 12.8 km E. of Coolatai, 14.ii.1977, *G.P. Guymer* 953a (NE, NSW).

DISTRIBUTION (Fig. 2):

Scattered throughout inland regions of south-eastern Queensland and north-eastern New South Wales from the Blackdown Tableland to the Coolatai-Wallangra area.

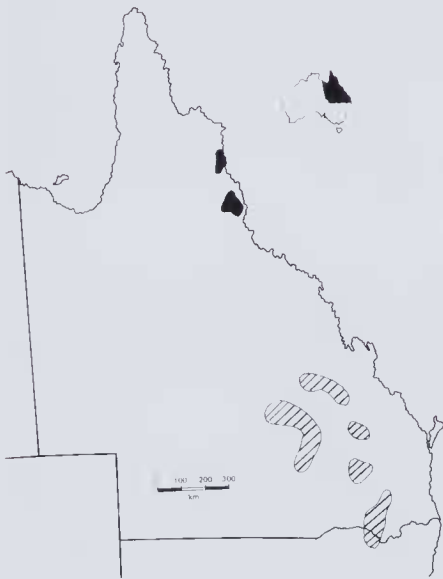


Fig. 2. Distribution of *Xylomelum cunninghamianum* (hatched) and *Triunia erythrocarpa* (black).

ECOLOGY:

In dry sclerophyll forest or woodland on sandy soil derived from granite or sandstone. Often in association with *Angophora costata*, *Callitris endlicheri* and *Eucalyptus* spp. at altitudes from 350 m to 630 m. Flowering February to May; fruiting May to December.

NOTES:

The epithet honours Allan Cunningham (1791-1839), a Kew collector and later colonial botanist in New South Wales. Cunningham's connection with the present species is an interesting one, although as will be seen from the discussion below, it is a somewhat indirect one.

The name *Xylomelum salicinum* first appeared in the literature as a Cunningham manuscript name placed in synonymy under *Xylomelum pyriforme* (Gaertner) Knight by Robert Brown (1811). The first valid combination involving the name *salicinum* was made by Meisner (1856) when he recognized *Xylomelum pyriforme* β [? = var.] *salicinum* (*foliis elongata-lanceolatis*). Meisner (l.c.) indicated that the type collection was a Cunningham specimen from "circa sinum Moreton Bay". As far as can be determined the actual specimen concerned was collected

by Cunningham on 25 June 1829 on the Brisbane River about 88 miles (140 km) north-west of the (then) penal settlement on Moreton Bay. An examination of a colour photograph of this specimen shows that it is clearly not referable to *X. cunninghamianum*.

The confusion of *X. salicinum* with *X. cunninghamianum* started when Benth (1870) raised the epithet *salicinum* to specific level. His circumscription of *X. salicinum* included elements referable to *X. cunninghamianum*, *X. scottianum* (F. Muell.) F. Muell. and *X. pyriforme*. Mueller (1886), while pointing out the confusion resulting from Benth's work, also misapplied the name *X. salicinum* to specimens which have now been placed in *X. cunninghamianum*. In more recent times as the confusion became obvious *X. cunninghamianum* was referred to on some herbarium sheets as "the inland form of *X. salicinum*".

Neither of the two *Xylomelum* species from Western Australia, viz. *X. angustifolium* Kipp. & Meisn. or *X. occidentale* R.Br. are closely related to or resemble *X. cunninghamianum*. Of the eastern Australian species *X. scottianum* most closely resembles *X. cunninghamianum*, the leaves being about the same size and drying a similar colour. The overall size of the inflorescences and flowers of both these species are also similar. *X. scottianum* differs from *X. cunninghamianum* in having a cream to pale brown indumentum on its inflorescence and perianth and in having leaf blades with fewer and less pronounced veins. The fruit of *X. scottianum* also has a very characteristic acuminate distal end which contrasts with the much blunter fruit apex of all other species. *X. pyriforme* differs from *X. cunninghamianum* in being a much more robust plant with larger leaves, flowers and fruits.

TRIUNIA L. Johnson & B. Briggs

In a recent paper (Foreman, 1986) I indicated that some specimens from north Queensland which had been referred to *Helicia youngiana* W. Hill & F. Muell. var. *robusta* (basionym for *Triunia robusta* (C. White) D. Foreman) may represent a new species. This new species is now formally described as *T. erythrocarpa*.

Triunia erythrocarpa D. Foreman, sp. nov.

[*Helicia youngiana* C. Moore & F. Muell. var. *robusta* auct. non C. White (1933): C. White, Contr. Arnold Arbor. 4:23 (1933) *pro parte quoad* Kajewski 1219].

Frutex vel arbor 5-10(-20) m alta. *Ramuli* teretes, in surculis ferrugineo-tomentosi mox glabri. *Folia* opposita vel in verticillis 3-4-foliatis; lamina obovata ad anguste elliptica vel elliptica, acuminata, ad basin attenuata, 6.5-19 cm longa, 2-7 cm lata, chartacea ad coriacea, ± glabra; margines integri (in plantula dentati); nervi in dimidio infero recti ad marginem anastomasantes; petiolus 5-8 mm longus. *Inflorescentiae* terminales, ad c. 7.5 cm longae; rachis ferrugineo-tomentosae. *Bractae* pares florum subtendentes gemmas tegentes, interdum ad anthesis persistentes, ovatae, 7-10 mm longae, marginibus ciliatis, extus glabrae, intus atro-ferrugineo-velutinae. *Pedicelli* graciles, 4-6 mm longi, ferrugineo-tomentosi. *Flores* amoene odorati, albi ad cremei. *Perianthium* zygomorphum, 1.2-2 cm longum; tubum parce ferrugineo-pilosum; limbus 2-3 mm longus, ad anthesin revolutus, dense ferrugineo-pilosus. *Antherae* 4, 1 mm longae. *Glandes hypogynae* 2, liberae, oblongae. *Ovarium* dense ferrugineo-tomentosum; praebitor pollinis rhomboideus, c. 1 mm longus. *Fructus* coccineus, globosus, 1.8-3.5 cm. diam.; pericarpium semi-carnosum; semen ± globosum, c. 1.5 cm diam.

Shrub to tree 5-10(-20) m tall. *Branchlets* terete, ferruginous-tomentose on young shoots, soon becoming glabrous. *Leaves* opposite or in whorls of 3-4; blades obovate to narrowly elliptic or elliptic, acuminate, attenuate at the base, 6.5-19 cm long, 2-7 cm wide, chartaceous to ± coriaceous, ferruginous-tomentose when immature, becoming ± glabrous with some hairs persisting on the midrib and the undersurface, drying dark brown to olivaceous above, lighter beneath; margin entire (seedling leaves toothed); midrib flattened above, raised and prominent beneath; nerves 5-8 on each side, flattened and barely visible above, raised and only slightly more prominent beneath, straight in the lower half, anastomosing towards the



Fig. 3. *Triunia erythrocarpa*. Fruiting branchlet, x 1. Leaves from B. Gray 2992 (MEL 682787); fruit from Dansie 20104 (spirit material).

margin; reticulations lax to dense; petiole 5-8 mm long. *Inflorescence* terminal, to c. 7.5 cm long; rachis 1 mm diam., ferruginous-tomentose. *Bract* subtending flower pairs 7-10 mm long, c. 5 mm wide, acute to acuminate, rounded at the base; margin ciliate with short fine ferruginous hairs; outer surface glabrous; inner surface, dark ferruginous-velutinous; bracts covering young buds, usually caducous before anthesis, 3-4 bracts at base of inflorescence sometimes persisting for some time after other bracts have fallen. *Floral bracts* absent. *Pedicel* slender, 4-6 mm long, ferruginous-tomentose. *Flower* pleasantly perfumed, white to cream. *Perianth* zygomorphic, 1.2-2.0 cm long, anterior tepal free, 3 remaining tepals cohering at base for at least half their length; tube sparsely ferruginous-hairy; limb 2-3 mm long, becoming revolute at anthesis, densely covered with ferruginous hairs which protrude about 1 mm beyond end of limb. *Anthers* 4, 1 mm long. *Hypogynous glands* posterior, 2, free, oblong, about 0.5 mm long. *Ovary* densely ferruginous-tomentose; style slender, sparsely ferruginous-hairy at base becoming glabrous towards the tip, protruding from an anterior split prior to anthesis, becoming bent at an angle to the pedicel; pollen presenter rhomboid, c. 1 mm long. *Fruit* bright red, indehiscent, globose, 1.8-3.5 cm diam., glabrous; pericarp semisucculent throughout, c. 2.5-3 mm thick; seed globose, c. 1.5 cm diam. (Fig. 3).

TYPE COLLECTION:

State Forests Reserve 310, Swipers Logging Area, 8.x.1973, *B. Hyland 6919* (flowering collection). (Holotype: QRS. Isotypes: BRI, NSW, QRS).

REPRESENTATIVE SPECIMENS EXAMINED (Total number examined 25):

Queensland — State Forest Reserve 310, Windin Logging Area, 15.ii.1974, *B. Hyland 7195* (QRS); Timber Reserve 165, Kobi Logging Area, 25.ix.1980, *B. Hyland 10656* (QRS); East Malanda, Atherton Tableland, 22.ix.1929, *S.F. Kajewski 1219* (BRI); State Forest Reserve 755, North Johnstone Logging Area, 3.iii.1976, *V.K. Moriarty 1961* (QRS); c. 9 miles (14.5 km) from Ravenshoe on Ravenshoe — Millaa Millaa Road, 10.x.1968, *K. Williams 205* (BRI).

DISTRIBUTION (Fig. 2):

North-eastern Queensland. Common in the Ravenshoe — Millaa Millaa — Palmerston region. There are also a number of collections from north of Mossman (Mt Spurgeon & McDowall Range) with the most northerly record being Mt Amos, about 27 km south-east of Cooktown.

ECOLOGY:

In rainforest, at altitudes from 38 m to 1000 m. Flowering September to October; fruiting February to March.

NOTES:

The specific epithet refers to the relatively large, bright red fruit which characterizes this species. The mature fruits of other *Triunia* species are smaller than those of *T. erythrocarpa* and often develop a bluish or purplish colouration at maturity.

The seeds of *T. erythrocarpa*, like those of other *Triunia* species, are apparently quite poisonous and even small quantities (about half a seed) can produce a severe reaction including decreased pulse rate, lowered blood pressure, diarrhoea and headache (Everist, 1981).

T. montana (C. White) D. Foreman, the only other species of *Triunia* known from north Queensland, is confined to areas of montane rainforests and differs from *T. erythrocarpa* in having mostly elliptical, coriaceous to very coriaceous leaves, shorter flowers and smaller fruits which are purplish at maturity.

Specimens now placed in *T. erythrocarpa* have been confused previously with *T. robusta* (C. White) D. Foreman (syn. *Helicia youngiana* C. Moore & F. Muell. var *robusta* C. White) a species known only from the Eumundi/Maroonch (Yandina) area of south-east Queensland. *T. robusta* has fruits and flowers approaching

the proportions of those of *T. erythrocarpa* but the former species can be distinguished by its larger, coriaceous, oblong-elliptic leaves which sometimes have a few teeth towards the apex.

T. youngiana (C. Moore & F. Muell.) Johnson & Briggs from the rainforests of north-eastern New South Wales and south-east Queensland can readily be distinguished from *T. erythrocarpa* by its smaller fruit which matures blue to reddish, and by its acute (not acuminate) leaves which often have a sub-bullate appearance and usually have a few teeth present towards the apex.

ACKNOWLEDGEMENTS

I would like to thank the Directors of BRI, NSW and QRS for the loan of herbarium material. I am very grateful to Dr H.J. Eichler for his advice concerning the misapplication of the name *X. salicinum*. Mr Alex George kindly prepared the Latin descriptions. I also thank Mr R.H. Barley for the illustrations.

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